Department of Horticultural Science

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COMPOSTING FOR HOME GARDENS

Larry Bass, Extension Horticultural Specialist

Gardeners have used compost for centuries.When materials such as leaves and grass clippings are composted, a microbial process converts plant wastes to a more usable organic amendment. Grass clippings and leaves can be hauled to municipal or county composting facilities as one means of disposal. However, many homeowners may find it more convenient and economical to compost these materials in their own backyards. In either case, the finished compost can be used as a soil amendment or mulch to improve most soils for gardens, landscape beds, lawn preparation or even as 15% of a potting medium. This leaflet has been written to provide guidelines on how to build and maintain a compost pile.

Decomposition of organic material in the compost pile is dependent on maintaining microbial activity. Any factor which slows or halts microbial growth will also impede the composting process. Efficient decomposition will occur if the following factors are used to fullest advantage.

Aeration: Oxygen is required for microbes to efficiently decompose the organic wastes. Some decomposition will occur in the absence of oxygen (anaerobic conditions); however, the process is slow and foul odors may develop. Because of the odor problem, composting without oxygen is not recommended in a residential setting unless the process is conducted in a fully closed system. Turning the pile once or twice a month will provide the necessary oxygen and significantly hasten the composting process. A pile that is not mixed may take three to four times longer before it can be used. A well mixed compost pile will also reach higher temperatures which will help destroy weed seeds and pathogens.

Moisture: Adequate moisture is essential for microbial activity. A dry compost pile will not decompose efficiently. If rainfall is limited, it will be necessary to water the pile periodically to maintain a steady decomposition rate. Enough water should be added to completely moisten the pile, but overwatering should be avoided. Excess water can lead to anaerobic conditions. Water the pile so that it is damp, but does not remain soggy. The compost will be within the right moisture range if a few drops of water can be squeezed from a handful of material. If no water can be squeezed out, the material is too dry. If water gushes from your hand, it is too wet.

Particle size: The smaller the size of organic wastes, the faster the compost will be ready for use. Smaller particles have much more surface area that can be attacked by microbes. A shredder can be used before putting material in the pile, and is essential if brush or sticks are to be composted. A low cost method of reducing the size of fallen tree leaves is to mow the lawn before raking or run the lawn mower over leaf piles after raking. Raked piles should be checked to insure that they do not contain sticks or rocks which could cause injury during operation of the mower. If the mower has an appropriate bag attachment, the shredded leaves can be collected directly. In addition to speeding up the composting process, shredding will initially reduce the volume of the compost pile.

Fertilizer and Lime: Microbial activity is affected by the carbon to nitrogen ratio of the organic waste. Because microbes require a certain amount of nitrogen for their own metabolism and growth, a shortage of nitrogen will slow down the composting process

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